



MAGAZINE

PRICE TWOPENCE

JULY 1954



The *I.C.I. Magazine* is published for the interest of all who work in I.C.I., and its contents are contributed largely by people in I.C.I. It is edited by Richard Keane and printed at The Kynoch Press, Birmingham, and is published every month by Imperial Chemical Industries Limited, Imperial Chemical House, S.W.1. Telephone: VICTORIA 4486. The editor is glad to consider articles for publication, and payment will be made for those accepted.

CONTENTS

I.C.I. and Canada, by Alexander Fleck	194
Information Notes No. 99	197
One Man and His Job—Chemical Plumber	202
Garden Notes, by Philip Harvey	204
'Ardil' and its Future, by A. G. White	206
The Cuckoo's Secret, by Edgar P. Chance	209
I.C.I. News	213
Going . . . Going . . . Gone! by Cedric Jagger	221

FRONT COVER: Girl holding a length of coating material made from 'Ardil' and rayon. The 'Ardil' in the blend gives a warm, soft feel like cashmere.

OUR CONTRIBUTORS

EDGAR P. CHANCE, who retired during the war after nearly 40 years' service with Chance and Hunt Ltd. and I.C.I., is probably the greatest living authority on the cuckoo. His collection of 24,000 birds' eggs (including several hundred cuckoos) is now in the Natural History Museum, South Kensington.

ALEXANDER FLECK was appointed Chairman of I.C.I. in July last year. The steps in his career have been as follows. Started as lab boy at Glasgow University. Gained chemistry degree there at age of 22. Appointed to university teaching staff, 1911. Joined Castner-Kellner Alkali Co. as chemist, 1917. Works manager of Wallsend Works, 1919. Managing director, General Chemicals Division, 1931. Chairman, Billingham Division, 1937. I.C.I. director responsible for Billingham and Wilton, 1944. Deputy Chairman, 1951.

CEDRIC JAGGER works in Central Publicity Department. He is an enthusiastic collector of antiques.

A. G. WHITE is one of the three Nobel Division managing directors and has a special responsibility for 'Ardil.'

I.C.I. AND CANADA

By Alexander Fleck (Chairman of I.C.I.)

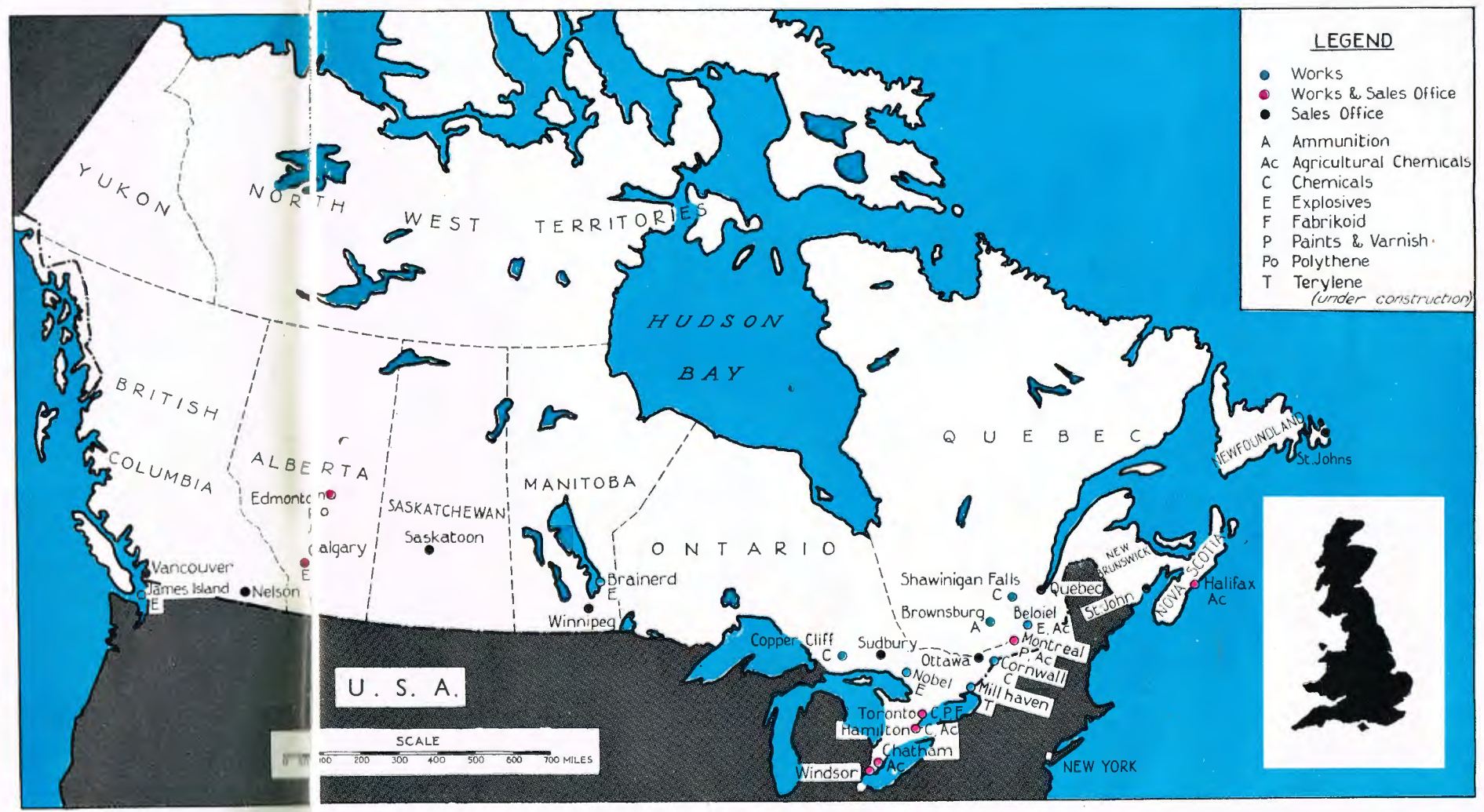
On 1st July, with the formation of Canadian Industries (1954) Ltd., ended the painful process whereby du Ponts and I.C.I. divide their Canadian interests in order to comply with the American anti-trust laws. Here the Chairman of I.C.I. reviews these changes and describes the new set-up.

THE history of Canada has not been a long one as national histories go, but over its 400 or so years it has been a distinctly lively one. In nearly all phases of its history Canada has been much involved with, and greatly influenced by, her southern neighbours living in what is now the U.S.A.

The two peoples have over the centuries been acting and reacting upon each other, mainly harmoniously but sometimes acrimoniously. For example, there was that Secretary of State for the U.S.A. in the 1860's who did not make things smoother by saying in colourful and robust language that at any time Canada could be "kissed or kicked" into a union with the U.S.A. The days for that kind of talk are long since passed. Canada with just over 15 million people is now finally and immutably established as an important nation among the nations of the world. It has been said while it was the first world war which made Canada a nation, it was the second world war which made Canada a power among the nations.

These few historical reflections are by way of an introduction to a brief considera-

tion of our interests in Canada. I give them because it seems to me that the fortunes of our associated company there have grown with the country, while they have also been influenced to some extent by the close proximity of the very big chemical industry of the United States.



A map of Canada, showing the huge area over which the works and sales offices of C.I.L. (1954) are scattered

Lord McGowan played a big part in the creation of Canadian Explosives Ltd.—CXL, as it was usually known. It was formed as far back as 1910 upon the foundation of the Hamilton Powder Company, which itself dates back to 1862. Nobel's Explosives Company, which had acquired a controlling interest in the Hamilton Powder Company in 1899, was the dominant force in its organisation. Du Ponts, who had a small holding in Hamilton Powder Company, came in as 50-50 partners.

The partnership of Nobels and du Ponts operating CXL was from every point of view a very successful one. CXL grew and expanded, until after the formation of I.C.I. the name of the company was changed to Canadian Industries Ltd. to meet developing interests and circumstances. It was a company of some considerable magnitude, with its administrative headquarters in Montreal requiring two large blocks of offices, its research laboratories at Belœil and its works well scattered over the whole of Canada but predominantly in the main consuming areas of Ontario and Quebec. It had a turnover of \$153 m.—say £50 m. per annum—and a balance-sheet totalling more than \$175 m., while the market valuation of its more

than 7,000,000 shares was of the order of \$250 m. Altogether C.I.L. employed some 9100 people.

I.C.I. and du Pont each held 41.8% of the ordinary capital, the remaining 16.4% being held by some 3000 individuals, mostly Canadians. From our point of view this organisation had developed very smoothly and very satisfactorily and was moreover continuing to do so.

Events in the United States, however, could not be left out of account. In 1944 the Department of Justice asserted by legal action that I.C.I. and du Pont were together contravening some of the anti-trust laws of the United States. One of the instances quoted of such contravention was the joint association in the business of Canadian Industries Ltd.

After involved and protracted legal proceedings the District Court of New York came to the conclusion in 1952 that the case against I.C.I. and du Pont had been established and ordered, among other things, that our association with du Pont in C.I.L. should be dissolved. In spite of the fact that we do not feel that we have done anything wrong under any Canadian or United Kingdom law or under any accepted principle, either of ethics or of good business, we are complying with this instruction because along with du Pont (but of course to a very much lesser degree) we have considerable assets, personnel and business contacts and prospects in the United States, as a result of which it has been held by the United States courts that I.C.I. is, for the purposes of these proceedings, subject to their jurisdiction.

It was agreed, after a lengthy process which I need not go into here, that the wishes of the United States court should be met by forming two new companies. One of the companies is an I.C.I. company and the other a du Pont company, each company having its appropriate portion of outside shareholders and each company taking over approximately half of the existing assets of C.I.L.

A Difficult Task

This split into two physical halves has not been easy, but it has been accomplished with the help of a lot of good will all round. *The broad result is that the nylon intermediates works at Maitland, the nylon spinning plant at Kingston and the "Cellophane" and polythene film plants at Shawinigan have gone to du Pont; all the other C.I.L. plants producing agricultural chemicals, chemicals, explosives, ammunition, paints, leathercloth and polythene came under the aegis of the I.C.I. company.* The former employees of C.I.L. are naturally employed by one or other of the new companies—du Pont of Canada Ltd. and Canadian Industries (1954) Ltd.

A second major interest which we have in Canada is the company called Imperial Chemical Industries of Canada

Ltd. It was set up less than a year ago for two purposes. The first of these was to hold together in easily accessible form all I.C.I. financial matters in Canada. That is the reason why Mr. P. T. Menzies of our Treasurer's Department is one of the two vice-presidents. For example, the new I.C.I.-controlled company, Canadian Industries (1954) Ltd., will not pay dividends direct to I.C.I. in London, but to I.C.I. of Canada as the holder of our stock interest in the new C.I.L.

The second part of the responsibilities of I.C.I. of Canada at the present time is to advance by all possible means at the quickest possible pace our new plant for the manufacture of 'Terylene.' That is why the other vice-president of I.C.I. of Canada is Dr. R. Beeching, who was, until he went out to Canada some eight months ago, a technical member of the 'Terylene' Council. In due course this Canadian 'Terylene' plant will be offered to the new C.I.L.

Unique Polythene Works

In conclusion I would like to add a sentence or two on the type of production which will be carried out by our Canadian subsidiary.

Many of the works operate processes very similar to the processes operated in Britain. The manufacture of chlorine and the production of blasting explosives are two such examples. I would, however, like to mention two works of special interest.

The first is the polythene works just outside Edmonton, Alberta, which has just come into chemical operation. It is based on a specially rich ethane-containing gas from the recently developed Leduc oilfields. This works, costing something like \$13 m., has a number of unique features, and we will watch its operation with much interest. The second works I would mention is the 'Terylene' works now under construction at Millhaven. This is a \$20 m. operation situated on the shores of Lake Ontario at what we believe to be a very well chosen site near Kingston and within convenient reach of the Toronto textile industry.

I hope that what I have written is enough to show that I.C.I. is deeply committed to Canada, and therefore we intend to pay a great deal of attention to it so that our interests there will prosper and grow. We believe that the team there, led by Mr. Greville Smith, has the ability and the knowledge to continue their contributions to the chemical industry of Canada in the future just as they have made their contributions in the past.

Canada has often been called a land of freedom and opportunity. This is even truer today than it was in the past. I feel sure that the I.C.I. influence through its associated companies there will continue to grow in this great and commercially expanding territory.

Information Notes

THE PROFIT-SHARING SCHEME

Last month Central Council at Scarborough was dominated by the announcement of the profit-sharing scheme. Here is an account of these discussions, including a full report of Sir Ewart Smith's speech in which he explained the scheme.

LAST month's meeting of Central Council at Scarborough was completely dominated by the announcement about the introduction of a profit-sharing scheme. The announcement was made by the Chairman, Dr. Alexander Fleck, at the dinner the evening before the meeting.

A few people apart from directors were of course in the secret, but it is remarkable what a well-kept secret it was. The preparation of the scheme had entailed months of discussions in London and a great deal of staff work, but nevertheless not a breath of all this had leaked out beyond the office walls.

The Chairman's first announcement of the scheme was made in a most informal manner. He said that the morning papers would be carrying the news—"and I expect it will be headline news," he added—but he wished works councillors to be the first to hear about it and to hear about it from the lips of the Chairman of the Company. He gave no details of the scheme—these were reserved for the formal discussions the next day—but the bald announcement that the Company had decided to introduce a profit-sharing scheme called for prolonged applause.

The next day at Central Council Sir Ewart Smith, who had been chairman of the board committee which investigated the problem, gave the details. They were admirably put, and at once it was evident that this scheme, like all good schemes, was in essence a simple one. Sir Ewart spoke along the following lines.

"Before I describe the scheme itself, I think it would be helpful to tell you some of the main points which the Profit Sharing Committee had in mind throughout.

"First, the scheme is intended to emphasise the essential unity and partnership of everyone who is engaged in the business. The Chairman has already told you that industry of the type which we serve really has partners of three kinds—the customers, the stockholders, and the employees of every grade.

"You will have seen from the Annual Report that our customers have been treated well: because of our improvement in efficiency we have been able to keep prices down in a remarkable way. The employees, I think you will agree, have

also fared well: their wages and salaries on the average have gone up by no less than 165% since the war. The return on the stockholders' money has also increased, but to a lesser extent. We now believe that a profit-sharing scheme, properly based and properly understood, can emphasise still further this sense of partnership and make it more apparent to all concerned. That is the first point which we want to stress.

"Secondly, we do *not* believe that profit sharing in an undertaking as large as I.C.I. can be expected to serve as a direct incentive to the individual to work harder and more effectively on an hour-to-hour or day-to-day basis. We believe that many profit-sharing schemes in the past have failed because those who started them thought they would have that result, and were correspondingly disappointed when they did not. We believe our scheme of profit sharing should encourage co-operation and understanding, but that the personal incentive to hard and effective work should come in other ways. In this connection you all know what we have been doing to institute individual incentives based on work study, including work measurement, and to make them as fair and as objective as possible. That, we believe, is the proper way to encourage the individual to achieve a high level of day-to-day activity. The profit-sharing scheme goes much deeper: its object, as I have said, is to stress teamwork and unity of purpose. It is intended to encourage everybody to take a wider interest in what is happening and to have a better understanding of the Company's business.

"Thirdly, the scheme is framed so that in essence it is absolutely simple. Anybody can understand it, and everybody can calculate very quickly what will be the results so far as he or she is concerned.

"Fourthly, it is not to be confused in any way with wages or ordinary remuneration. It does not, therefore, cut across the principle of collective bargaining or even of collective constitutional action—Heaven forbid that the case for that should ever arise!

"Lastly, it has been framed quite deliberately to encourage

people to save—to save not for ever, but until they have a really good reason to use their savings. It may be that they want to get married, or perhaps their children are getting married, or they want to buy a house, or it may be they want to save towards their retirement; but under this scheme there is no compulsion to save beyond the first few years.

"I should now like to give you a rather more detailed description of the scheme. Under it, all I.C.I. regular employees in the United Kingdom who work for more than 22 hours a week and whose employment can be terminated by a period of notice of three months or less will be eligible subject to certain qualifications.

"The most important qualifications which will cover 99% of the cases are these:

- Anybody coming into the scheme must be over 21 years of age.
- No one can come into the scheme unless he or she has already served one full year.
- No one will receive the bonus unless he or she is still serving the Company when the bonus is paid over to the trustees. This will take place after the annual general meeting, because it is only then that we can finally determine what the rate of bonus is to be.

"The value of the bonus to each individual is arrived at with extreme simplicity. It is to be 1% of total annual remuneration, whether wages or salary, for each 1% by which the total Ordinary dividend exceeds 5%.

"The scheme will not come into operation until the proposed capital reorganisation has been agreed at the annual general meeting in June, when the Ordinary capital will be doubled. The Ordinary dividend for 1953 is to be 15%, which will be equivalent to 7½% on the increased capital. Thus, assuming this level of Ordinary dividend in 1954, anyone who is qualified by service and so on would get 7½% less 5%, i.e. 2½% of his or her total remuneration for the year—that is, equivalent to just over one week's pay.

"Income tax at the personal rate will have to be deducted—that is the law of the land. In order to make the tax arrangements simple, the scheme will take the remuneration for the fiscal year—that is, the tax year up to 5th April. Under P.A.Y.E., the total pay of all kinds which is received for the

year ending 5th April is worked out and each individual receives a statement of it. Working on this total will make it easy for those in the scheme to know what is involved, as well as easy for the Company to administer.

"Because of this arrangement, the tax payable in respect of the bonus will not interfere in any way with the ordinary weekly or monthly deductions under P.A.Y.E. After deduction of tax at the appropriate rate, the net amount of the bonus will be credited to the trustees.

"I have mentioned trustees several times. Who are they? What do they do? The trustees will be appointed by the

Board and will have among them recipients under the scheme. It is intended that the trustees should operate rather like the trustees of the Workers' Pension Fund.

"When the trustees have received from the Company the net bonus on behalf of each individual, they will purchase from the Company Ordinary stock at the market price current at that time. They will then hold that stock on behalf of each employee until the further amounts received in successive years bring his total up to twenty-five units of stock or more. When that time is reached, a stock certificate will be made out in the individual's name and the holding will be passed over to him as absolute owner. He will thus become an Ordinary stockholder in the Company and will be free to do exactly as he wishes with his holding, like any other one of the 250,000 stockholders. Judged on the past progress of the Company, I think it would be wise to keep it, because it should in time become still more valuable.

But I want to make it quite clear that he can do what he likes with it. If he wishes to sell it, that is his business. It will be no good asking the Company to do it; he must go to his banker or broker, who will do it for him.

"I think you will agree it would be hard to find a scheme which recognises so frankly and fully the idea which the Chairman referred to, that we regard our employees as partners in the business. This is not only going to make you partners; it is going to make you stockholders as well. I think nobody could ask for more than that.

"I want to make it plain that after the first occasion on which the twenty-five or more stock units have been passed over to

THE SCHEME IN A . . .



You qualify to enter the scheme if you are over 21 and have served with the Company for at least one calendar year.

You accumulate in the hands of trustees a bonus in the form of I.C.I. stock. The amount of the bonus will be 1% of your year's earnings multiplied by the percentage by which the ordinary dividend for the previous year exceeds 5%. If for example the dividend for 1954 is 7½%, your first bonus would be 2½% of your total pay for the year ending 5th April 1955. This sum less tax would be put with the trustees about June next year.

You draw from the trustees in blocks of 25 units of I.C.I. stock as soon as the trustees have accumulated this amount on your behalf. This holding will then be yours to keep or to sell.

FRIDAY MAY 21 1954 *Financial Times* PROFIT SHARING

I.C.I.'S decision to introduce a profit-sharing scheme should be welcomed by everyone who has the interests of British industry at heart. The scheme itself is sound in principle and should be easy to operate. About 75,000 employees will benefit from it in the first instance, and in a normal year the scheme will cost the company somewhere in the region of £1m., or 2½ per cent. of the total wages paid to those eligible to participate. Shareholders need not worry that the company is taking on a commitment which it will find difficulty in meeting. The proportion of profits available for sharing is related to the Ordinary dividend paid. The directors, who will have complete control of the operation of the scheme, retain the right to modify its terms as and when seems necessary.

Big Fillip

The importance of the decision lies in the fact that it is the first time since the war that a firm of I.C.I.'s size has introduced a profit-sharing scheme in this country, and it will accordingly give a big fillip to a movement which has been growing steadily in recent years. Before the war profit-sharing, while enjoying distinguished intellectual support in English-speaking countries and on the Continent, in practice enjoyed a very chequered career. The mortality rate of schemes was extremely high. This was in part due to the impact of the depression on the level of profits. It is not easy to share money which does not exist. In part, however, it was due to the fact that schemes were introduced in many cases where labour-management relations were characterised by mutual distrust. To initiate a profit-sharing scheme in such circumstances is to invite disaster, as the history of innumerable failures testifies. Workers are apt to see in such schemes a weapon to break union loyalties, to keep down wages, or to force a higher rate of output. They come to expect a bonus as a right, and will not recognise that it depends on the profitability of the firm's opera-

MONEY AND TRADE *Daily Herald* By V. J. Burtt Share bonus for ICI workers

Palmerston House, E.C.2.
London Wall 3431.

ABOUT 80,000 workers of the £400million Imperial Chemical Industries are to get a bonus in Ordinary shares of the company.

Everyone with 2½ years service or more will benefit.

Based on a dividend estimate the scheme will cost the company at least £1million a year. On the average income of £500 a year for the company's operatives and salaried staff, it will mean about £12 10s. a year subject to tax.

By wooing the workers, Dr. Alexander Fleck, the chairman, hopes to prevent chemical nationalisation.

In a special statement last February he said that nationalisation would harm the company's relation with its workers.

The present scheme, he says, should identify the interests of employees more closely with those of the company.

I.C.I. sold a record £281.9million of goods last year, an increase of £5.6million.

* * *
More trouble for exporters! Prices of the goods we import from abroad to turn into manufactured goods have stopped falling.

In April they rose 2 points to 98

Some Press Comments

DAILY EXPRESS FRIDAY MAY 21 1954

The City

6, Throgmorton-street, E.C.2.
(LONDON WALL 2257)

Daily Express
By the City Editor

I.C.I. workers will say 'Thanks a million'



WHAT a fine old cheer will go up this morning from 75,000 Imperial Chemical Industries workers with the factory notice boards telling of a £1,000,000 profit-sharing plan. The lucky 75,000 are to get a yearly bonus of 1% of their annual wage packet for each 1% I.C.I. pays out in dividend over 5%.

After the coming Ploughshare I.C.I.'s dividend will have at least a 7½% look. That would mean a 2½% bonus—worth £10 after tax to the £10 a week man.

But the bonus will not be paid in cash. That is the difference with I.C.I.'s scheme which has taken the figure men a year to work out.

Instead the money will be handed over to trustees, who will use it to buy I.C.I. shares from the company at whatever the price may then be.

After the one-for-one Ploughshare issue I.C.I. shares should stand around 31s. On that basis the £10-a-week man will be credited with six shares a year.

Each time he has 25 shares to his credit they will be handed over to him by the trustees—to sell, or put in the old oak chest.

Mumbling

The bonus will go to all of I.C.I.'s workers in Britain who are over 21 and who will have served two and a half years with the group come June next year.

Only in its first year will the scheme cost a million—after that it will grow as more workers qualify.

A fine scheme—which the bosses can be proud of. But no doubt the long-haired boys will mumble about it "watering down the Ordinary capital" and "reducing the earnings cover."

Such talk is nonsense. The scheme will mean issuing around 500,000 I.C.I. shares a year—against the 140 million that will be floating around.

And by the time I.C.I. has set the £1,000,000 cost against profits for tax purposes the scheme will cost it hardly anything.

Good for all

It is a fine spur to production and by bringing shareholders and employees into the prosperity of the company will be good for all.

75,000 Employees to Benefit by I.C.I. Plan *Birmingham Post* Profit-sharing Scheme

A profit-sharing scheme which would cover 75,000 of Imperial Chemical Industries Ltd.'s 107,000 employees, and cost £1,000,000 this year, is proposed by the directors in their 27th annual report published to-day. The scheme is subject to the approval at the company's annual general meeting on June 17 of proposals to increase the authorised share capital from £120,000,000 to £220,000,000 and give scrip bonuses to preference and ordinary stockholders.

The 1953 report shows that I.C.I. has total capital and revenue reserves of £184,580,095. Under the profit-sharing scheme, a bonus will be paid to trustees, who will acquire, at current market prices, ordinary stock in the company.

the recipient the process will begin again until a second twenty-five have accumulated, and so on.

"I have referred to twenty-five *units* of stock. On the Company's present capital, today's market value is just over 60s. per unit. After the capital reorganisation that value will immediately be halved, and the stock is then likely to stand at about 30s. The ordinary employee, on average, receives about £10 a week, or £500 a year, so that $2\frac{1}{2}\%$ of that gives a total of £12 10s. After taking off P.A.Y.E.—this will vary somewhat in each case—the net bonus is likely to be about £10, which will buy about six or seven units of stock at 30s. a time. On this basis it is to be expected that the trustees would accumulate twenty-five units of stock for the £500-a-year man in four or five years, provided the Ordinary dividend remained at $7\frac{1}{2}\%$.

"Dividends on any stock held by the trustees will be placed to the credit of the individual accounts to buy more stock and so speed up the accumulation of the necessary twenty-five units. After the stock certificates have been issued to recipients, the dividends will, of course, go direct to them.

"The first year in which this scheme is intended to apply is the year in which we now are. 1st January 1954 will thus be the beginning of the first bonus year. The bonus will not be paid to the trustees until the middle of next year, when we shall know what dividend has been earned for 1954.

"The remuneration on which the bonus will be calculated will be the total pick-up of each qualified employee for the year ending 5th April 1955.

"Each participant in the scheme will receive a statement of his account annually from the trustees. This will show what his bonus has been for the year, how many units of stock he has standing to his credit, what balance of money there may be, and so on.

"That is the scheme in simple outline. I think it might be helpful if I made one or two comments.

"Detailed rules of the scheme will be available to everybody later this year. These rules will almost certainly answer most of the questions which you may have in mind to ask, so do not worry about them too much at this stage.

"I am sure that some of you here who are nominally not in I.C.I. proper but who work for companies or agency factories and so on are saying 'How does this apply to me?' Summarising these subsidiary companies, I can tell you at once that the following will all be in:

Fyffe & Co.	Paper Goods Manufacturing Co.
I.C. (Pharmaceuticals)	Steatite and Porcelain Products
Lightning Fasteners	Trimpell (workers only)
Marston Excelsior	Agency Factories

"There may be other associated companies which will have to be considered in more detail.



... the bald announcement

"Let me make it plain how soon a man will get the bonus after he joins, if this is not already clear. Suppose he joins the Company after he is 21, he will have to serve one year before he enters the scheme. He then has to serve for the first bonus year, and his bonus will be paid to the trustees midway through the following year. Thus nobody will receive the bonus until they have been with the Company for at least $2\frac{1}{2}$ years.

"What is this scheme really going to be worth? Nobody can say. It will be worth what you and we make it; but taking the current basis—we have no reason to believe that in the immediate future we shall go back on that—it means that the man getting £500 a year could accumulate stock during his working life to a value of £400 quite apart from the increasing dividends which he would draw year by year. But one would hope that, judged by the progress of the Company in the past, and with what I am sure we all intend to do in making it still more efficient in the future, the scheme should give something very much better than that. I am not going to prophesy, but you can use your own imagination. There is no reason why the ordinary individual, if he holds his stock, and if things prosper, should not be able to accumulate a very large sum indeed.

"On present calculations the scheme will affect something like 75,000 people out of the 107,000 now in the Company. The difference is made up of those under 21 and the short-service people who have not yet served their qualifying period.

"The cost to the Company, assuming the $7\frac{1}{2}\%$ level of dividend, i.e. equivalent to 15% this year, will be about £1,000,000.

"Some years ago we had a publication describing the Company called *This is Your Concern*. This was true then, and it will be still more true in the future, when we shall all be able to say 'this is *our* concern'."



... admirably put

Sir Ewart's talk was listened to with the closest attention throughout. It followed a most

illuminating opening address by the Chairman, who elaborated some of the more interesting bits of information in the Annual Report and ended with a survey of trading conditions in India, where he recently visited our factories.

Concerning the profit-sharing scheme, the Chairman had this to say:

"I sincerely hope that we will move towards a very real partnership of being both employees and part owners of our company. The full results of such a partnership will take time to come to fruition, but I believe that our successors in the years to come will compliment us on taking a bold and correct decision."

The mundane business of Central Council inevitably came as something of an anticlimax after the excitement created by the profit-sharing announcement. Those hardy annuals, safety footwear and long service awards, again came up for discussion, and the first of them received a quick burial. Then Mr. E. T. Grint, Chief Labour Officer, took the floor to

inform councillors of how the Staff Grade Scheme was working now that there was no longer a quota. "Roughly speaking," he said, "we now have three out of four of all eligible employees on Staff Grade; in effect, there are half as many people on Staff Grade again as there were before the last assessment."

Mr. Grint went on to issue a word of warning. Out of the 26,000 on Staff Grade over 2000 (roughly one in ten) had been warned that their performance was not up to standard, in most cases because they had fallen down on timekeeping. This would have to be remedied.

Staff Grade for Over-20's?

Next came a motion from Nobel Division to the effect that all workers should be eligible for promotion to Staff Grade after three years' service with the Company provided they had reached the age of 20. This motion was backed by the ladies, since in Nobel Division of almost 1500 workers under 21 over 1100 are girls. The mover was Miss J. MacFarlane; she was supported by no less a person than Mr. A. P. Cattle, manager of Nobel's Westquarter Factory, who said that his supervisors were quite convinced that given proper management young people would give the Company what it wanted in return for the privilege of Staff Grade. Further support came from Mr. J. Hastings (Metals), who pleaded for the motion "in the interests of we shareholders," a sally which brought the house down. The motion was carried by a substantial majority, and the Chairman intervened to say it would be considered by the Board and a decision given at the next Central Council meeting.

After luncheon the Finance Director, Mr. J. L. Armstrong, gave a very informative analysis of the annual accounts. This was followed by discussion of an Alkali Division motion that "the Board should consider once more, as a matter of urgency, whether it can give further assistance to those who, despite long service with the Company, inevitably are—or soon will be—in receipt of a relatively small I.C.I. pension."

Mr. Yarwood, the mover of the motion, gave some interesting figures. He said that, taking an index of 100 for the year 1937, the labourer's wage in the Company rose from 100 to 259, an increase of 159. During the same period retail prices

had risen from 100 to 229, an increase of 129. The pension had risen from 100 in 1937 to 132 at the present moment, which was an increase of 32.

Mr. J. A. L. Young, head of Pensions Department, then intervened to say that the motion was tantamount to a request for an alteration in the rules of the Pension Fund, since this fund, under present Company policy, was the sole means of providing pensions for workers on retirement. But an alteration to the rules could only be made after an actuarial valuation report, and the next valuation (the valuations being done every five years) was not due until towards the end of 1956.

However, the motion was carried with only two votes against.

Next came another motion concerning the Pensions Fund, viz. that entry into the fund should be optional for an employee joining the Company on or after age 55, because at and after this age he would not be able to qualify for a pension.

Mr. W. Tranter (Metals), who moved the motion, said that the present policy was unfair—a remark to which Mr. J. A. L. Young took exception, pointing out that the man of over 55 years on joining, even though he did not get a pension, received the return of his contributions together with $3\frac{1}{2}\%$ interest tax free—"really a very good form of saving." Moreover, it was a matter which affected only a relatively small number of people.

Nevertheless, the motion was carried *nem con*.

I.C.I. Scarf for Women?

Finally, the day ended on a lighter note. Miss A. Anderson (Nobel) wanted an I.C.I. scarf for women, and she was supported by Miss J. MacFarlane in these apt words: "The men say that wearing the I.C.I. tie will help them to recognise each other and to get together when they are away from home. This is much more difficult for the women. We can hardly go up and talk to the man; he would much prefer to recognise the I.C.I. scarf and so come up and talk to us. I have pleasure in seconding the motion."

So effective were those simple remarks that the Chairman intervened to say he agreed with the proposal. And so, after a presentation to Mr. J. Parkes, the retiring chairman of workers' representatives, ended a memorable Central Council.

R.M.K.

'ARDIL' AND ITS FUTURE (continued from page 208)

moth resistance is useful when blended with anything but protein fibres, while it can also assist in supplying good drape and some crease resistance. Finally, it can be supplied at about a third of the price of top-grade wool. 'Ardil' fibre has been rightly termed a good mixer.

Up to the present, 'Ardil' fibre has not been sold for use on its own but has been utilised in blends with other fibres, mainly with wool, cotton, silk, rayon and nylon. Successful fabrics of novel properties have been designed in each case, and 'Ardil' fibre is being sold in such diverse textile materials as blankets, cardigans and carpets. When mixed with wool 'Ardil' can give a smoother and silkier cloth than wool alone,

but the garment is just as warm, as was proved during a recent expedition to Greenland.

A properly designed addition of 'Ardil' to cotton or rayon can transform a garment suitable for summer use only into a colder-weather garment, and into one that will not cause the irritation felt by some sensitive skins when wearing wool. Blends of 'Ardil' with cellulosic fibres have given excellent shirting and pyjama cloths, and are finding increasing use in ladies' and children's dresses and coats. When nylon is added to this blend the fabric produced is novel in handle and appearance, and seems likely to find many applications.

Work continues ceaselessly on improving the properties of 'Ardil' protein fibre and the fabrics made from it. There are indications that the rewards of this work may not be far away.

CHEMICAL PLUMBER

SEVENTY feet up on the top of a tower at the Chance and Hunt works of the General Chemicals Division at Oldbury Tom Derricott steered me past the sulphuric acid distribution troughs to a lead vessel about the size of a rainwater butt. "Take a look at that," he said. "Look at the pattern on that seam."

The vessel was seamed down the side, and down the length of the seam ran a delicate herringbone pattern: beautifully executed, but of no obvious use.

"Perhaps," said Tom, "that seam could have been much plainer. Nobody sees it tucked away up here. But a well-finished seam always conceals a sound join, and the plumbers' tradition is to turn out a shop-window job wherever it is going to be put."

The house plumber who leaves his tools behind and provides music-hall comics with one of their best jokes has little in common with chemical plumbers like Tom Derricott. They are both craftsmen in lead, but Tom and his kind are the mainstay of a whole industry. The sulphuric acid plant at Oldbury is a chemical plumber's paradise, for it is practically built of lead. The beautifully seamed vessel at the top of the Glover tower that Tom had shown me is a minute part of this lead empire; the tower itself is built of lead, and there are others like it.

But even lead cannot withstand acid indefinitely, and the chemical plumbers at Oldbury are always busy with repairs. "I've got a job on over there, for instance," said Tom. "Typical maintenance work. This chamber needs a patch in it. My mate's getting the stuff ready now."

The chamber, a massive affair 49 ft. high and 38 ft. in diameter, was made of lead (by Oldbury plumbers, incidentally). A small leak had appeared and Tom had been sent for. His mate was working with a shave hook on the patching sheet, a two foot square piece of chemical lead, producing bright, clean edges.

To weld on the patch Tom used the flame from a tiny gun (called a finger pipe) fed from a cylinder of butane gas and oxygen. Adjusting the flame to suit the conditions of the job is a tricky business and took time. His mate held up the sheet of lead to the place that was to be patched, and Tom applied the flame.

It looked easy. As the flame melted the edges of the sheet, Tom coaxed the molten metal, using only the flame, to produce a neat weld. "If you think it looks easy, try it yourself," he said.

In my hands the flame nibbled the edge of the patch and molten lead ran freely—but no weld resulted. There seemed

some danger of melting a hole in the side of the chamber, so I handed back the finger pipe.

Tom finished the patch in twenty minutes. That was easy, he said. But on maintenance work all sorts of conditions are met with. Sometimes you had to do a job lying down, often in bad light. Acid fumes and drips had to be faced from time to time.

Lead burning, as it is called, is only one aspect of the plumber's work. There are always intricate new parts to be fabricated for the plant in the plumbers' shop, and it is here that the highest skill is called for. The plumbers work almost entirely by eye, but they need a working knowledge of geometry, for nearly everything is produced from the flat sheet by cutting and welding. To form a flat sheet of lead into a large-diameter pipe with a right-angled bend in it, for example, is a problem that might make a competent mathematician think quite seriously. An experienced plumber hardly thinks twice about it. With a straight-edge and a piece of chalk he can mark out his sheet before the mathematician would have time to get out his graph paper.

Occasionally there is a call for components to be made without seams, and the plumber resorts to "dressing." With a box-wood mallet he can coax the lead into almost any shape without reducing or increasing its thickness—an important consideration in chemical plumbing. In this way a skilled plumber can perform the geometrical impossibility of producing a seamless four-way junction pipe from the flat sheet.

"You need a phlegmatic temperament to be a good plumber," Tom told me. "If you get upset the job goes wrong. The process people always want you to hurry, but you've got to keep calm. And you need to start young. There's an art in using the finger pipe that you can only learn before your muscles get set in their ways."

Plumbers take pride in the fact that their tools and their methods have changed little since the time of the Romans. But they can move with the times when it is necessary. In recent years they have learned to use polythene in place of lead in components where lightness is essential and where the temperature of acid or fumes will not be more than 65–70° C. The technique of plumbing with polythene differs little from the technique used for lead, as Tom showed me, except that a jet of heated nitrogen is used for welding instead of a flame.

At Oldbury they make 800 tons of sulphuric acid a week from gasworks spent oxide. Tom Derricott gave me the impression—which the works manager verified—that unless the chemical plumbers were always on the job this all-lead plant would soon cease production entirely.

M.J.D.

Tom Derricott





Illustrated by Susan Einzig

IN most gardens roses will still be carrying their first crop of bloom, especially varieties like *Peace* and *Red Ensign*, which take longer to get into their stride owing to the extra-large size of the individual flower. Practically all varieties of hybrid teas and hybrid polyanthas have two or three main flushes of bloom, and some flower more or less intermittently. To ensure that each tree produces the maximum of which it is capable, all dead roses must be removed promptly. This makes a tremendous difference to the plants, as there is no effort going into the production of unwanted seed-pods.

A spell of prolonged dry weather often comes in July, and many gardeners wonder whether it is worth while watering their roses. If you have mulched the plants with peat, lawn mowings or similar organic material they will be less likely to suffer from drought. Nevertheless watering may be necessary, especially for spring-planted roses on light, thin soils.

Do not be half-hearted about watering: an occasional heavy watering is far more effective than frequent sprinklings on the surface, which usually cause the ground to cake and seldom reach the roots. Some textbooks will tell you that only rain water should be used on roses, tap water being harmful. In my experience this is complete nonsense.

Scientists have already proved that tap water can be given to tomatoes with perfect safety, and this applies equally to roses.

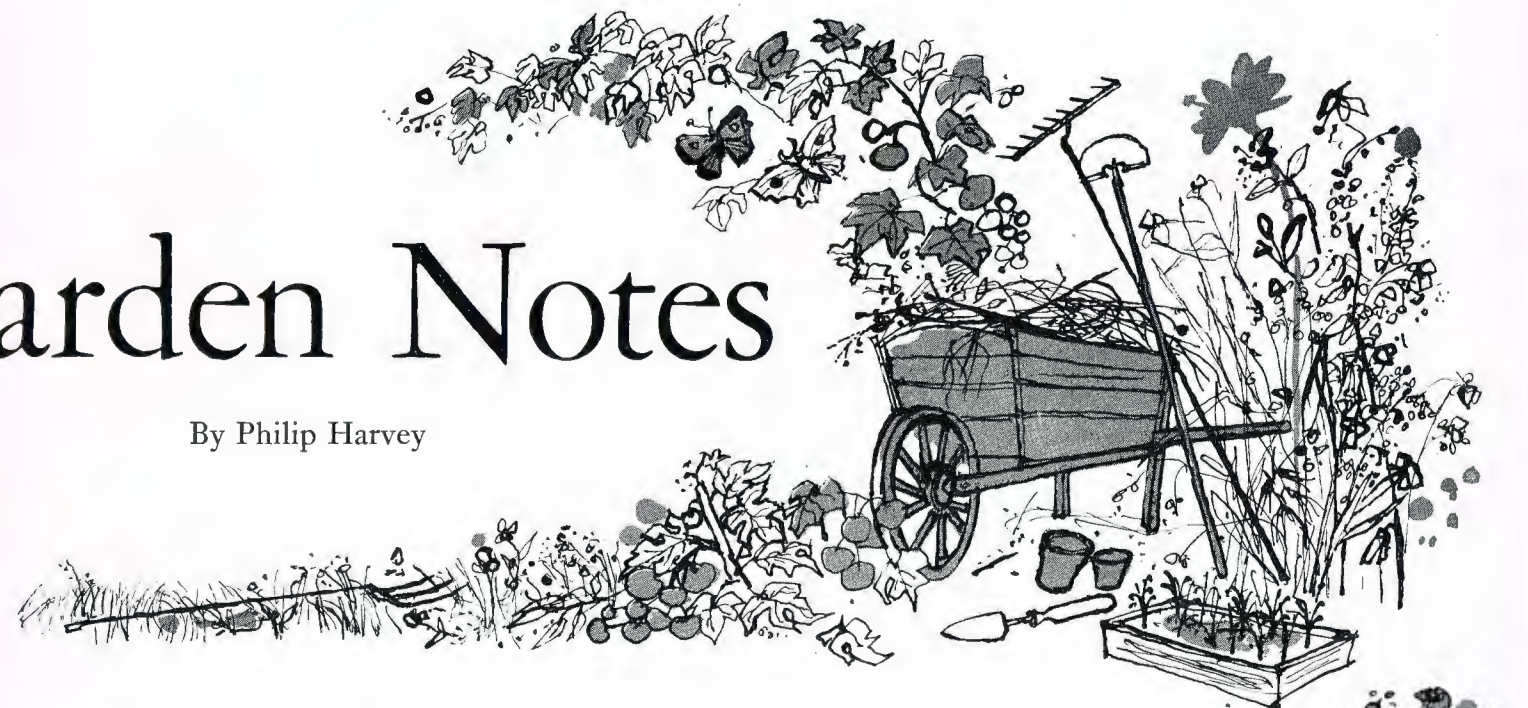
If you have only a few bushes it will be sufficient to sink a flower pot into the soil not less than nine inches from each tree. The rim should be level with the soil surface. Fill the pot with water several times and replenish as necessary every two or three days. An alternative method, which is really essential if you are growing any quantity of roses, is to make trenches about six inches deep, filling several times with water. With this method great care must be taken not to disturb the roots of the trees.

Mildew is the most widespread disease of roses. Fortunately it is not particularly difficult to master, provided—and this is absolutely essential—you spray with a suitable fungicide immediately the first signs of infection are noticed. If you wait a week or two, given the right atmospheric and weather conditions, mildew will spread rapidly, and few so-called immune varieties will escape entirely.

There is an important distinction between the terms “immune” and “resistant” which are sometimes wrongly used in rose catalogues. “Immune” means that a variety of

Garden Notes

By Philip Harvey



rose or other plant will never succumb to a particular disease. “Resistant” implies that the variety in question does not usually become infected unless conditions are very favourable.

You will usually find that roses with dark, glossy green foliage are fairly resistant to mildew. Conversely, those with soft, pale green leaves are often somewhat susceptible. Mildew flourishes in dry positions against walls and hedges, especially if air cannot circulate freely. A humid atmosphere and sudden changes of temperature also foster infection.

The idea behind spraying is not to wipe out the mildew already present on the foliage but to cover healthy leaves and stems with a film of fungicide to prevent further infection. You can use a dispersible sulphur preparation or a thiram spray such as ‘Tulisan.’ I prefer the latter, as it leaves no visible deposit.

July is the best month to summer-prune apples. There is a distinct difference between summer and winter pruning. The latter is undertaken when there are no leaves on the trees and is intended to encourage wood growth. Summer pruning is, of course, done when the tree is in full leaf and is practised

to stimulate the production of fruit buds.

It is best to start with early varieties like *Beauty of Bath* and *Worcester Pearmain*, finishing with late kinds such as *Cox's Orange Pippin* and *Laxton's Superb*. The actual pruning consists of cutting back the majority of lateral or side shoots to about five leaves from the base. The rest are left full length, similarly the leaders at the end of each main branch.

Outdoor tomatoes will now be growing freely, but remember that you cannot rely on a good crop *every* year without some protection. If the plants have been covered with cloches for a few weeks after planting out and are protected similarly in early autumn, nearly all the fruits will ripen in the open. Though plenty of sunlight is necessary to assist the ripening of the fruits, the plants must not be allowed to dry out. A permanent mulch of peat, hop manure or grass mowings helps to keep the roots cool, but I have usually found watering unavoidable in a prolonged dry spell.

Never allow tomato plants to waste their energy in developing side shoots. Rub these out immediately they are noticed. The growing point must also be pinched out after three fruit trusses have formed.





'Ardil' and its Future

By A. G. White (Nobel Division)

'Ardil' fibre is only just on the verge of coming into its own. As the practice grows of blending several fibres to produce the cloth best suited to a particular purpose, so will the demand for 'Ardil' increase. Moreover, there are indications that an even better 'Ardil' may be out before long.

IT is still not possible to make a silk purse from a sow's ear, but in recent years the scientist has made fabric just as fine as silk from starting materials apparently as unpromising as the skin of a pig.

The oil of the groundnut is much sought after for use in margarine. The residue, the oilcake, is used as cattle food in Britain. In India, on the other hand, it is often dug back into the ground to act as fertilizer. Yet this oilcake, usually called groundnut meal, can supply the basic material for the production of a fibre of great beauty and utility in the manufacture of clothing.

At the end of the nineteenth century the problem of clothing was relatively simple. All the fibres used were of natural origin, and practically all were used alone. Thus, if warm clothing were needed, or clothing of good draping properties and resistant to creasing, the obvious choice was a garment woven or knitted from a yarn spun from wool. For a garment where warmth was unnecessary or undesirable, cotton or linen would be used, especially if retention of shape during wear was unimportant. For sheer luxury in appearance and handle the choice was a garment in the expensive but long-wearing silk.

In the early twentieth century came the first man-made fibres—of rayon. These were not truly synthetic fibres, as they involved, not the building up of the fibre from its fundamental chemical elements, but the regeneration and chemical modification of the complicated cellulose molecules already present in the timber utilised as raw material. The introduction of rayon in its original form was hindered not only by its own defects, but by prejudice and the fact that it had to be processed on machinery designed for fibres of different properties, namely wool, cotton, linen or silk.

Today the various rayons are much improved in quality, while our capacity to utilise them successfully has increased enormously. For these and other reasons more rayon is now used than wool.

The first truly synthetic fibre—nylon—began to be produced in bulk about fifteen years ago. Its production was a triumph for organic chemistry and for the chemical industry as well as for the inventor of nylon, the late W. H. Carothers.

Nylon is very strong, highly extensible, and excellent in its ability to withstand abrasion. It also has a very low capacity to absorb moisture, so that it dries out very easily after wetting. Its properties render it eminently suitable for use in making ladies' stockings, and its success in this field has been phenomenal. As a result its use has spread to many other fields, and there are now a number of different nylons and quite a number of other fibres of the same general type.

But despite their virtues neither rayon nor any of the true synthetic fibres can replace wool adequately in all its general uses—and good wool is scarce. According to the statisticians, it is likely to become much scarcer. At present good wool costs four or five times as much as cotton, and cotton is often used in cold parts of the world where men cannot afford the much warmer wool.

Wool is warmer and more comfortable than cotton because of its soft handle, its crimp and its moisture absorption, while its elasticity gives garments made from it good draping qualities and crease resistance without special treatment. It has the additional advantage that it is far less inflammable than cellulosic fibres such as cotton and rayon.

It is self-evident that a material having the same basic composition as wool would stand an excellent chance of having similar properties to wool. This idea has been widely pursued in the last twenty years, and experimental fibres have been made from protein derived from many sources. Protein is the basic material from which animal fibres are made. It is found in many animal and vegetable products, including fish waste, casein from milk, maize, soya beans and groundnuts. All these materials provide

reasonably cheap protein, but casein was the first to yield a commercial fibre.

Casein supplies are strictly limited, however, and even if all today's world exports were diverted from their present uses in the paper and plastics industries they would provide only 50,000 tons of fibre per annum. This is insignificant when compared with the million tons of wool used per annum. In our experience, too, casein does not provide so good a fibre as groundnuts, so that I.C.I. production was based on the latter. Here raw material supplies are adequate, as ten million tons of groundnuts are grown every year—enough to supply nearly two million tons of fibre. On the other hand, the Americans have made a good fibre called Vicara from zein, derived from maize, but here again there seems to be some shortage of suitable raw material.

Advantage of Groundnuts

As a source of protein fibre, groundnuts have the additional advantages that they are grown in quantity in many parts of the world and that they are imported into the United Kingdom primarily for the oil which forms 50% of the weight of the nut. As this oil would be essential for margarine manufacture even in wartime the supply of meal is assured. Unfortunately the price of the meal at present is several times what it was fifteen years ago, so that the advantage of using a by-product is partly lost.

The groundnuts are usually imported into Britain already shelled, and the first process in 'Ardil' fibre manufacture is to remove the brown skin from the kernel by mechanical means. If this is not done thoroughly the fibre is fawn instead of cream-coloured. The kernels are then pressed to extrude the oil, but the temperature must be kept low to avoid damage to the protein. The rest of the oil is then removed by the use of a solvent.

Up to this point the process is carried out by the British Extracting Company at Bromborough, who then send the resulting meal by rail to Dumfries, a town with a textile tradition. At Dumfries a large modern factory has been built outside the town, and this is devoted to the preparation of the fibre from the meal. It has a capacity of 22 million pounds of fibre per annum.

The first stage of the process involves dissolving out the protein from the meal in a dilute solution of caustic soda in water. The insoluble residue is washed with water, dried, and sold as cattle food. After purification the protein is redissolved in a stronger solution of caustic soda, and the resulting liquid is forced through a large number of small holes in a spinneret into a solution of sulphuric acid in water. There the protein is precipitated as a number of fine, long fibres, which are thereafter all treated together in the form of a tow.

The tow is first washed and is then tanned with formaldehyde in order to render it completely insoluble in water. After further washing and cutting, the dried staple, in some suitable length between $\frac{3}{4}$ in. and 8 in., is pressed into hessian bags to form 200 lb. bales for sale. It is the staple fibre from these bales that is used by spinners in the textile industry for blending with other fibres and spinning into yarn for weaving or knitting into fabric.

'Ardil' fibre is sold in staple form like wool, and resembles wool more than does any other fibre. It is extensible like wool and has a rather similar warm handle. It can absorb a good deal of moisture and warms up like wool in so doing, so that it is comfortable to wear. It has an advantage over wool in being resistant to moth damage, and dyes easily like wool. Its disadvantage lies in its rather low tenacity. Its strength is less than that of an average wool, both wet and dry.

On the other hand, the fact that 'Ardil' is man-made gives it a number of advantages. It is prepared clean and needs no cleaning, degreasing or sorting like wool. Care in its production makes it more uniform than wool chemically, while it is also definitely more resistant to chemical attack. It has the further advantage that by incorporating pigments into 'Ardil' fibre during its manufacture it can be produced in colours that are less affected by sunlight and water than is possible with wool.

Blending Practice Grows

'Ardil' fibre has appeared at a fortunate time. In recent years many new fibres have appeared with excellent properties. But as one follows the other it becomes obvious that none has all the desirable textile properties. By now it has become clear that the simplest and best way of getting the ideal garment is usually to use two or more different fibres in one yarn, i.e. to blend for the effect you want. This has been done with wool and nylon for socks, giving both comfort and long life. The practice of blending is spreading and will spread much further, as it has great advantages.

'Ardil' fibre has many of the properties of the ideal blending fibre. In the first place it is man-made and so can be tailor-made to the exact dimensions required. Thus the diameter of the fibre is controlled by the size of the hole through which it is squirted, and its length by cutting. By this means it can be made to supply something very difficult in the case of wool—a precise match for the fibre with which it is to be blended.

Then it is a protein fibre, conferring a warm handle and comfort due to its moisture-absorbing capacity. This is specially valuable in conjunction with many of the newer synthetic fibres, which are lacking in this respect. Its

(Continued on page 201)

The Cuckoo's Secret

By Edgar P. Chance

(formerly managing director, Chance and Hunt Ltd.)

Mr. Edgar Chance is the first man to have discovered how the cuckoo lays her eggs. His observations, supported by ciné camera photographs, are still as fresh as when they were made 32 years ago.

THERE is probably no bird which makes such a wide appeal to the popular imagination as the common cuckoo. "Imagination" is doubly the right word, for surely no other bird has been the subject of so many fantastic ideas and theories. Most of them are based on the flimsiest of evidence, but by constant repetition they have obtained a strong hold upon otherwise knowledgeable naturalists.

My own ideas about the habits of the cuckoo are based on observations I made on a Worcestershire common from 1918 onwards. As an egg collector I had over a period of years made accidental discoveries of cuckoo's eggs in the nests of other species. The circumstances in which I found them caused me to question the tentative theories published by other cuckoo enthusiasts, all of which agreed that the cuckoo laid her egg on the ground and carried it to the nest.

The common I chose for my observations was about seventeen miles from Oldbury Works, and there are probably one or two people still at Oldbury who will remember being pressed into service at week-ends or in the evenings. My fellow managing director, Mr. W. A. S. Calder, helped me in this way, as did Mr. C. F. Bristol (then the company's secretary), the general works manager, Mr. R. T. Maudsley, and Mr. W. Webb (now garage foreman at Oldbury). Fred Slann and Alf Jordan, chauffeurs at the works, were also keenly interested. One young friend of mine who was frequently to be seen dashing about the common was C. E. N. Guest, now an air marshal. But I probably owe most to my secretary, Miss Molly Young, who not only helped for long hours on the common but typed the manuscript for my book.

These observations began, as I say, in 1918, but it was not until June 1920, at 4.30 p.m. on Derby Day, that the secret of the cuckoo came out.

For several hours I had been watching a female cuckoo, which in turn had been watching a meadow pipit's nest.

From a tree overlooking the nest she would glide down nearly to the nest itself, then back again to the tree. She repeated the performance four times in ten minutes, on the last occasion settling beside the nest for an instant and then flying right away.

I went to the nest, found the four eggs untouched, and then resumed the watch, which by now was becoming exciting. After three-quarters of an hour the cuckoo returned to her observation post. Fifteen minutes later she again floated out of the tree and settled, apparently beside the nest. After a few seconds at the nest the cuckoo, chased by a pipit, flew away and disappeared. Going up to the nest I rejoiced to find that one of the fosterer's eggs had been replaced by a cuckoo's egg—still quite warm.

Here was an egg that had been laid under my very eyes! It by no means marked the end of my researches, for I still did not know just how it was done. But it refuted any belief I might have had in the antiquated theory that the cuckoo lays her egg on the ground and transports it by beak or claw to the fosterer's nest.

That afternoon in 1920 was the beginning of a series of observations I carried on for many years. In 1922 I and my helpers watched the same cuckoo lay twenty-five eggs in seven weeks, and we registered her every movement throughout each of her laying days.

Before laying (almost always in the afternoon) the cuckoo, usually concealed in an appropriate look-out post, sits motionless from one to three hours, during which time the egg is passing through her system. Just when she is ready to lay, she flaps and glides down to the nest, obviously "heavy with egg." Her first act on arriving at the nest is to remove one egg (occasionally more or none at all) from the nest, holding it in her beak while she lays her own egg in place of the stolen one. Within a few seconds she flies away with the fosterer's egg, which she proceeds to swallow when she next alights.

It is quite certain, although some people still disbelieve it, that the cuckoo lays directly into the nest. But when the entrance is too small or inaccessible she raises herself with outstretched wings and depressed tail against the nest and projects her egg (successfully or otherwise!) through the entrance.

You may ask how it was that I was able to be on hand every time my selected cuckoo laid. The possibility of forecasting in what nest, and on what day, a cuckoo will lay had probably never occurred to anyone before we solved this problem in 1920—and it does *seem* insoluble until the formula is given.

I realised that there is one way, and one way only, of predicting where and when a cuckoo will lay her next egg. It depends on something I had learned as an egg collector: that each time a nest of any species of bird is disturbed, its owner builds a new nest and lays a similar number of eggs. This repeat nest is, of course, built within the limits of that bird's territory, and the eggs are laid within a certain number of days (varying with the species) following the disturbance of the previous nest.

The essentials for forecasting the layings of a cuckoo are, then, as follows:

- (a) The selected cuckoo must victimise a particular species of fosterer whose nesting area must be within definable limits, e.g. a colony of meadow pipits or reed warblers, isolated from others of their species.
- (b) *Each* nest of *every* pair of the selected species of fosterer in the colony must be found by the observer *before* the cuckoo lays in it.
- (c) By removing the nest of each pair on alternate days (in order to correspond to what we proved to be the minimum laying interval of the cuckoo) the *repeat* nest of each pair will provide a potential cradle for an egg of the cuckoo, *each exactly when she wants it and without affording her any other choice of equally desirable nests.*

In this manner a precise forecast can be made. In 1922, as I have mentioned, we obtained twenty-five eggs from one cuckoo, all laid in meadow pipit's nests. Most of the layings were witnessed—sometimes there would be as many as six people in the portable "hide"—and several were filmed with a slow-motion camera.

In normal circumstances a cuckoo will probably lay about twelve eggs, and her laying life may be up to ten years. She lays the same type of egg throughout her life, often approximating in colour and markings to the eggs of the species she is victimising. She may lay in the nest of a different species if the nest she has marked down is destroyed before the laying is due; if there is not one of these ~~available~~, she may lay again in the nest where she

aid, or even, as I have known, in a nest containing birds.

Within thirty-six hours of hatching, and while still blind, the young cuckoo throws over the side of the nest, one by one, the rightful occupants of the nest.

How do the foster birds react to being victimised? Most of my organised observations have been centred on meadow pipits, and these usually display nervousness and often active hostility as soon as they become aware that they are the object of a cuckoo's observations. On occasions there is a vicious attack on the cuckoo, in which neighbouring pipits sometimes take a hand. On the other hand, some pairs appear to welcome the cuckoo's intentions, for they will fly up and virtually invite her as she sits in her observation tree and escort her as she glides to their nest. Their behaviour is sometimes suggestive of mesmerism.

To judge by the way in which many individual birds will begin to brood their eggs immediately after the cuckoo has laid, I am disposed to think that the visitation may be regarded, at least by some, as an honour conferred upon them.

Here I must say a few words to forestall possible criticism. It is only by interference with nests that it is possible to foretell when and where a cuckoo will lay her eggs; only an egg collector (as I was) could have made the discoveries about cuckoos which were described by Lord Grey of Falloden as "one of the most important contributions to our knowledge of the habits of one bird that has been made for a long time," and by Neville Chamberlain as "one of the most remarkable pieces of observation in Nature that has been done in my lifetime." Nevertheless, on many occasions during my life I have been in hot water with the people who campaign against egg collectors.

The truth is that birds do not feel distress when their eggs are taken. They will happily brood tins, pine cones or empty nests, and if their nests are destroyed birds may often be seen building again the very next day. The foster bird of a young cuckoo, moreover, watches its own young thrown out of the nest with every sign of unconcern, and will leave them to starve within inches of her eyes.

These observations of mine were first made public in *The Cuckoo's Secret* (published by Sidgwick and Jackson in 1922). Over 400 reviews of the book appeared in periodicals and newspapers all over the world, but there were still some diehards in ornithological circles who disputed my findings. I wagered £500 that no one could produce authenticated evidence that I was wrong. The money was still unclaimed when my second book, *The Truth about the Cuckoo* (published by Country Life Ltd.), appeared in 1940. One man came to me with a partridge's egg which he maintained had been laid by a cuckoo on the ground almost under his very eyes, but there has been no claim which I could entertain seriously.

ICI. NEWS

THE NEW CANADIAN COMPANY

A NEW company, Canadian Industries (1954) Ltd., came into being on 1st July. The events which led up to the formation of this company are described by Dr. Alexander Fleck in our leading article.

The new company has about 6500 employees, spread over nineteen plants and the head office in Montreal. The president, Mr. H. Greville Smith, is a Sheffield man who left Billingham for I.C.I. (New York) in 1929 and became manager of the Chemical Development Department of Canadian Industries Ltd. in 1932. Later he became manager of the Cellulose Products Group, and in 1939 he was made a vice-president. He was appointed a director in 1940 and elected vice-chairman of the executive committee in 1949.

During the war Mr. Greville Smith was vice-president and general manager of Defence Industries Ltd., a wartime subsidiary of Canadian Industries Ltd., and was responsible for construction and production for the government worth about a thousand million dollars. In recognition of his outstanding service in war industry he was made a Commander of the Order of the British Empire in 1944.

Mr. Greville Smith has been a member of the Defence Research Board since 1949. He is a member of the Montreal Board of Trade and has served as chairman of the executive committee of the Canadian Chamber of Commerce.

The two vice-presidents of Canadian Industries (1954) Ltd. are Mr. W. T. D. Ross and Mr. Leonard Hynes.

Mr. Ross was manager of the Development Department. He is a Canadian by birth, and joined the Company in 1927 after graduating in chemical engineering. He worked as a chemist and chemical engineer in the Explosives Division's works, and in 1939 became assistant to the general manager of the Explosives and Ammunition Group. For a period during the war he was production manager of the shell-filling department of Defence Industries Ltd.

Mr. Hynes was manager of the Paints and Coated Fabrics Department. He joined the company as a chemist after graduating at Toronto University. He has had experience of the research, sales and administration sides of the organisation, and was in turn assistant manager of the Chemicals Department and of the Fabrics, Paints and Plastics Department.

BIRTHDAY HONOURS

The inventor of 'Terylene' and an agricultural worker from Jealott's Hill Research Station received awards in the Queen's Birthday Honours list.

Mr. J. R. Whinfield, who is a member of the 'Terylene' Council, discovered 'Terylene' while in charge of research at the Broad Oak works of the Calico Printers Association. He receives the C.B.E.

The British Empire Medal goes to Mr. A. F. Buckle, who carries out the agricultural work of the field experiments at Jealott's Hill. He has been with I.C.I. since 1928.



Mr. H. Greville Smith



Mr. W. T. D. Ross



Mr. L. Hynes

The Board of Canadian Industries (1954) Ltd.



Mr. A. F. Buckle, awarded the British Empire Medal in the Birthday Honours List

A retired member of the I.C.I. staff was also honoured. He is Capt. (S) Sir Frank Spickernell, K.B.E., C.B., D.S.O., R.N. (retd.), who receives the C.V.O. Sir Frank, who retired as head of Central Staff Department in 1948 after some twenty years with I.C.I., has been a Gentleman Usher to the Queen since 1952. He also held this post under King George VI.

ALKALI DIVISION

A Long Service Record at Khewra

During his visit to Pakistan in February Dr. Fleck presented the first long service award to be gained for services rendered entirely at Khewra. The recipient was Mr. Mohammad Shafi, a stenographer with the Khewra Soda Co. Ltd., who completed 15 years' service on 6th July 1953.



Mr. Mohammad Shafi

Mr. Shafi is a national of Pakistan and was born at Khewra. He joined the Alkali and Chemical Corporation of India Ltd. in 1938, when the elementary plans of the Khewra Works layout were being prepared. Although he joined as a stenographer, the firm appointed him time and wages clerk when construction work started. During this period he and a few other office workers used to work until late at night, on Sundays and several other holidays without receiving overtime payment or any other marginal benefit.

When the plant was nearing completion Mr. Shafi became head timekeeper, with three assistants. He stayed in this position for some three years, and then, the firm deciding to put to good use his knowledge of shorthand, he was appointed stenographer. Throughout his years of service he has never been absent without leave—an excellent record that is now commemorated by the silver watch he received from the hands of Chairman.

Hidden Gold

While cleaning his trowel one day in April in what used to be the middle of Winnington Park, bricksetter's apprentice B. G. Clarke found a soil-encrusted ring. He handed it to his chargehand and thus started the ring off on a series of journeys which ended at the Victoria and Albert Museum in London, where it was sent for identification. Cleaning had revealed a heavy 18 ct. gold signet ring with a design of the head of a bearded man engraved in an agate. There was an inscription inside the ring which was thought to be written in Hebrew.



The fifteenth-century ring found at Winnington

The museum soon put at rest the minds of those interested in the history of the ring. They declared it to be hand-made, of the latter half of the fifteenth century, and of English workmanship. The engraved agate is probably late Roman.



Bricksetter's apprentice B. G. Clarke, who found the ring

The mysterious motto inside the ring was deciphered as "mielx a moy"—old French, not Hebrew. The meaning of this motto, "better mine," was, said the museum, exactly the way they felt about the ring.

The Division directors decided to present the ring to the Victoria and Albert Museum and to give a £10 award to young Clarke—a truly lucky find for him.

Workers' Chairman honoured at Scarborough

The retirement of Mr. Joseph Parkes from the Company and from his position as chairman of the workers' representatives at Central Council was the occasion for a ceremony at the Council held at Scarborough in May.

Speaking for the workers' representatives, Mr. J. Hastings of Metals Division drew attention to the fact that this was a unique occasion. Never before had the workers' representatives made a presentation to their retiring chairman in the presence of the I.C.I. Board, the Division boards and the management representatives.

Accepting the present of a teaset, Mr. Parkes expressed his confidence in the Works Council Scheme. "There has been



Mr. Parkes (left) receives a presentation from his fellow works councillors

some suggestion from the trade unions," he said, "that the Works Council has served its purpose. It has so far served its purpose, and can continue to do so. That has already been proved here today, and I hope that if ever there is an effort to destroy the Works Council you will fight it by every possible means available."

The Chairman, Dr. Fleck, added the good wishes of himself and the Board to those expressed by Mr. Hastings. "It has been a real privilege to us and a real joy," said Dr. Fleck, "to listen both to the remarks of Mr. Hastings and to the remarks of Mr. Parkes on the value of works councils in general and Central Council in particular."

Mr. Parkes was elected chairman of the workers' representatives last November. His 35 years' service with the Company have included 20 years as a works councillor, and he has also been a trustee of the I.C.I. Workers Pension Fund and of the Mond Pension Fund, and a member of the management committee of the I.C.I. Workers Friendly Society.

In private life Mr. Parkes has been prominent in Northwich local affairs and a keen church worker.

Silversmith wins Handicrafts Prize

A hand-made silver coffee set was judged to be the best exhibit in the whole of this year's Lawson Memorial Fund competition for arts and handicrafts. The trustees of the fund—raised in memory of the late Mr. Digby Lawson, a former chairman of the Alkali Division board—decided to split the competition into three sections this year, and cash prizes of £2 and £1 were awarded to the two successful competitors in each of the following sections: Paintings and Photographs, Models, and Needlework. In addition there was a prize of £1 for the best entry in the whole show.

Winning first place in the Models Section as well as the best in the show prize, the set of coffee pot, sugar basin, milk jug and tray made by Mr. Norman Bowen of Winnington Engineering Department was very much admired for the amount of craftsmanship that had obviously gone into its making. After drawing up his own design Mr. Bowen made the set entirely by himself, even to cutting and oiling the piece of walnut for the tray. He has been actively interested in silversmithing for some two years: the coffee set is his most ambitious creation. He claims that some of the credit for his

success should go to Mr. E. Hunter, the Division Research Director, whose lecture on silversmithing to the Northwich Society of Artists, of which Mr. Bowen is a member, inspired him to try his hand at this fascinating art.

Mr. Bowen is now a registered silversmith and has his own maker's mark of a monogram of his initials which, together with other official hall-marks, is stamped on any silverware that he makes. The coffee pot, which was made last year, bears an extra hall-mark of the Queen's head that will only be found on silverware made during Coronation year.

For anyone like Mr. Bowen, whose interest in silversmithing is on an amateur basis, the expense of silver is bound to be a limiting factor, especially when mistakes in smithing cannot be rectified. Mr. Bowen modestly says that plenty of patience is all that is needed to become a successful silversmith, but after seeing some of the beautiful wrought iron work and oil



An amateur silversmith: Mr. Norman Bowen with his prize-winning coffee-set

paintings that he has done—some of his paintings are at present on show at the Cambrian Academy at Cornway—one must add to this the need for a truly artistic ability.

Other first place winners in the competition were Mr. R. C. Stanway, a painter in the Civil Engineering Department, with his painting of a wharf scene, and Miss G. Simpson of Winnington Accountancy Department for her embroidered fire-screen.

The exhibition of entries at Winnington attracted some 1448 visitors.

BILLINGHAM DIVISION

C.D. Volunteers Complimented

Twenty-three Civil Defence volunteers from Mossend Factory took part in Scotland's first industrial C.D. exercise at the end of April.



Mossend Civil Defence volunteers go into action

In a full-scale exercise the men tested for radioactivity cleared debris, rescued "casualties," administered first aid, and extinguished fires caused by an "atomic bomb" which had been dropped on Cambuslang.

The assistant Civil Defence officer of the area afterwards complimented the I.C.I. teams on their work. "The men did remarkably well," he said. "If the whole of Britain was covered by as efficient units as this one we would have little to worry about."

DYESTUFFS DIVISION

Safety Trophy presented at Scarborough

Dr. Alexander Fleck, Chairman of I.C.I., presented the I.C.I. Accident Prevention Trophy to the Division chairman, Mr. C. Paine, at the Central Council at Scarborough in May.

The Division had won the trophy for the second half of 1953 with an improvement of 15.5% over its previous best accident rate. Its accident rate for the period, 0.441, made Dyestuffs the first Division to achieve the new safety target of 0.5.



Dr. Fleck presents the I.C.I. Accident Prevention Trophy to Mr. Paine

Presenting the trophy, Dr. Fleck said: "This is the first time they have actually won the trophy, but you remember that Sir Ewart Smith in his good judgment expressed the wish, when the trophy was first introduced, that it should be put into the care of the Dyestuffs Division, not because they had won it according to the rules but because they had been doing such excellent work on safety at that time. I think it speaks very highly of them that they could come along and beat their own record in such a handsome way, winning the trophy with that good figure."

Mr. Paine paid tribute to the Division safety officer, Mr. Pierce, who, he said, would be the first to agree that this achievement would not have been possible without the very close co-operation of the management and staff at all levels, in the factories and in the laboratories. "It is a matter of continuous effort," Mr. Paine said, "and I would like to express my personal thanks to all those who by their skill and care have made this record possible."

Two Local Councillors from Blackley

Blackley Works now numbers two local councillors among its employees. They are Mr. S. Humphries, who has been elected to the Manchester City Council, and Mr. F. W. Land, who is representative for Davyhulme West Ward on the Urmston District Council.

Both Mr. Humphries and Mr. Land completed 20 years' service with I.C.I. this year. Mr. Humphries is now serving for his seventh year as a Blackley works councillor and is a keen trade unionist. He has been appointed to the Welfare and



Mr. Humphries

Mr. Land

Transport Committees of the Manchester City Council; the work of the latter should give him no cause to worry, for he has been a member of the transport sub-committee of Blackley Works Council.

Mr. Land is the works cashier at Blackley Works and was transferred to Blackley from Spondon Works in 1944. He has taken a keen interest in local affairs and is a school manager and trustee of Davyhulme Day Schools. He is also a church officer and member of the council of Davyhulme Parish Church, and was for some years secretary and treasurer of the Men's Society at that church. He is now an executive member of the Manchester Diocesan Union of Church of England Men's Societies. He is not entirely new to local councils, having served at one time on the Breadsall (Derbyshire) Parish Council.

GENERAL CHEMICALS DIVISION

Trainer of Queens

Mr. James Dunning, a tetra processman at Castner-Kellner Works, is known in the Weston Point district as the man who coaches queens. For the past few years he has coached the I.C.I. Salt Queen and the Weston Point Rose Queen, and this year he has had the pleasure of training his own granddaughter as Rose Queen.

This pastime of Mr. Dunning's really started in the early 1900's, when at the age of 8 he began a hobby which was to win him fame all over the north-west of England. This hobby was national and morris dancing, and he began by training for the Over annual festival. At the age of 18 he formed his first troupe at Winsford, and success attended this venture from the beginning and many prizes and silver cups were secured.

When the Dunning family left the district and went to live in Runcorn the troupe was broken up, and before Mr. Dunning could start another in the Weston Point district war started. In 1914 he began work at Castner-Kellner, and for six years dancing slipped into the background. Then in 1920 he formed the Weston Point troupe, and for the next ten years it travelled over all the north-west and won over forty silver cups and gold medals and £800 in prize money. Later Mr. Dunning supervised the dance routine of the three local "queens" at Runcorn, Weston and Weston Point until once again war interrupted his efforts.

After the war he had to pick up the loose threads, and his dancing career restarted when the Halton Road Youth Club asked him to train a troupe in morris dancing. This troupe he later took to dance at the Albert Hall, London, and on his return to Runcorn went straight into pantomime: *Babes in the Wood*, *Dick Whittington*, *Cinderella* and *Mother Goose*, all with choreography by James Dunning.

METALS DIVISION

The Old Lady Retires

At the age of 89, and after 40 years' service with I.C.I., a widely respected Metals Division employee known as the Old Lady retired last month. Her retirement was the occasion for an unusual ceremony at Kynoch Works, Witton, at which both Dr. James Taylor, Group Director for Metals and Nobel

Divisions, and Mr. C. E. Prosser, Division chairman, were present.

The Old Lady's official name was Kynoch Locomotive No. 4. Her great age and noble origin prompted I.C.I. to offer her to the British Transport Commission for their collection of historical relics. The Commission accepted, and on 4th June the formal handing over took place.

No. 4's chief claim to fame was the fact that she was the last known surviving working locomotive of a class designed by the famous engineer John Ramsbottom. Built as a general shunter in 1865 for the London and North Western Railway, she was bought by Kynoch Ltd. in 1919, having been on loan to them since 1914. Today she is mechanically almost exactly as she was 89 years ago, and for her honourable retirement as an historical relic she had been specially repainted in her original colours.

No. 4 moved proudly up to the platform outside the Research Department at Witton, with Driver C. W. Burton on the footplate. On the platform were Dr. Taylor; Mr. Prosser; Mr. R. C. Bond, chief officer (mechanical engineering) of the British Transport Commission; Mr. J. H. Scholes, the Commission's curator of historical relics; Mr. S. Ellingworth of Imperial Chemical (Pharmaceuticals) Ltd., who "discovered" No. 4 while carrying out research for an article he was writing on I.C.I. locomotives; and other representatives of the B.T.C. and of I.C.I.

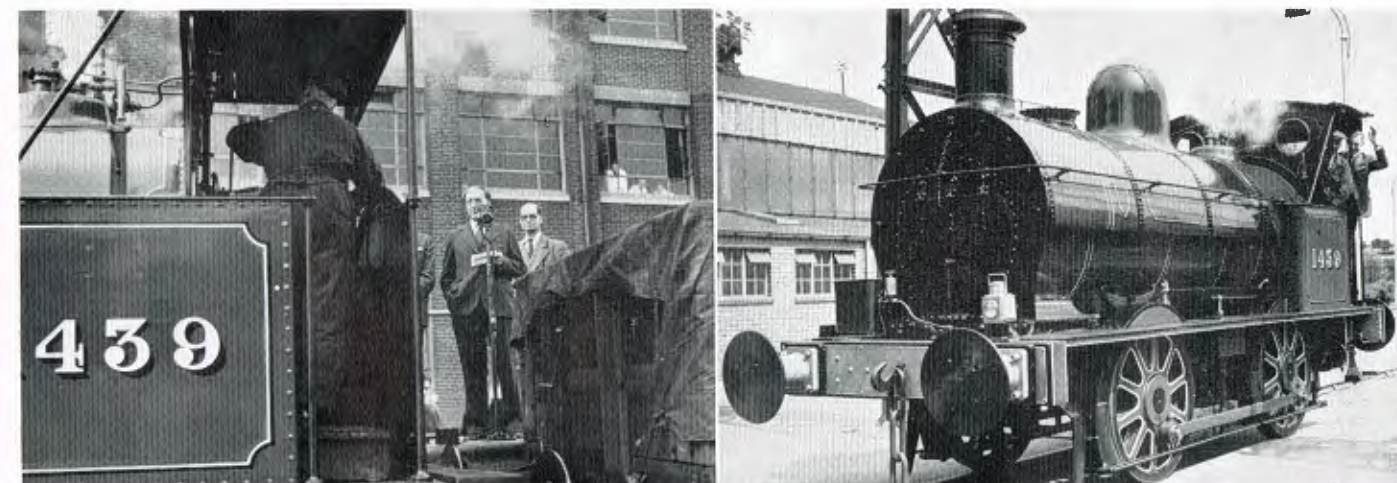
Mr. Prosser welcomed the visitors and introduced Dr. Taylor, who was to present the locomotive to the B.T.C. on behalf of I.C.I.

Dr. Taylor recalled that the Kynoch factory had been opened a year or two before No. 4 had been built. In the 92 years that had elapsed since then the works had changed out of all recognition, and probably more people were employed in the Research building behind the platform now than in the whole works in 1863.

The locomotive, he said, would certainly have outrun its century had it been allowed to. It was being replaced with a diesel shunting engine only because such locomotives were more economical to run and cleaner.

Dr. Taylor then asked Mr. Bond to accept No. 4 on behalf of the British Transport Commission.

After a speech of thanks Mr. Bond climbed on to the footplate and, with a jubilant toot on the whistle, drove the Old



Left: Dr. J. Taylor presents the Old Lady to the British Transport Commission. Right: Mr. Bond drives her away. With him on the footplate is driver Burton.

Lady down the line on the first part of her last journey, to Crewe.

No one was sorrier to see her leave than Driver Burton, who has been twenty years at Witton and for the last fourteen has driven this engine and others of the same class. Diesels may be cleaner and more economical, but to Driver Burton they are not at all the same thing.

Fitter Joseph Whitehouse, whose 39 years' service with I.C.I. have been spent in the engine sheds of Kynoch Works, was another man who found the occasion a sad one. "She was never any trouble," he said; "barring new cylinders, a new crank axle, and a new boiler in 1935, she's almost the same as the day she came here."

NOBEL DIVISION

Ghost from the Past



This genuine 1923 vintage car is in daily use. There is no mistaking the radiator and the monogram. It is a Rolls-Royce car in very good running fettle. Mr. Peter Gold, assistant staff manager, Nobel Division, bought the car five years ago, since when he has used no other.

Mr. Gold, as a member of the 20-Ghost Club, is very sorry indeed that he will not be able to enter his possession for the Rolls-Royce golden jubilee rally and Concours d'Elégance in Kensington Gardens on Sunday, 25th July. He has been looking hard at the entry form, but the date just cannot be made to fit other plans.

This Rolls-Royce is one of the very few models made with a three-speed gearbox operated from a centre gear lever. The engine is rated at 21.6 horse-power. The carburettor has been rebuilt by the makers, and the car now gives up to 20 m.p.g. on a long run.

Concrete Suggestion wins £170

Back in 1952 a good idea for speeding up the casting of concrete sleepers occurred to Mr. S. Arnold of Ardeer Factory Engineering Department.

Mr. Arnold entered his idea in the Suggestion Scheme, and the committee made him a first award of £5. Later he received a further award of £5, and at the end of 1952 another £10 for making the best suggestion of the year.

It seemed that Mr. Arnold's suggestion could not help making money. In 1953 his new method of casting sleepers was reviewed, and its worth having been firmly established he received another interim award, of £50. Since then the Arnold System has continued to speed up production of



Dr. Jenkins congratulates Mr. Arnold on winning £170 with an entry in the Suggestions Scheme

sleepers, and at the recent Division Council Mr. Arnold received from Dr. W. J. Jenkins, Division chairman, a final award of £100.

Like most good ideas, the idea that netted Mr. Arnold £170 was a simple one. Formerly built-up metal moulds had been used for casting sleepers at Ardeer. Mr. Arnold suggested that wooden moulds, placed on a vibrating table and lined with paper, should be filled with a fairly dry mix of concrete; the vibration of the table would complete the mixing, and the paper and its contents could be removed from the table, and the concrete component tipped out and allowed to set.

In practice it was found that his procedure enabled a much larger number of sleepers to be produced each day from a much smaller number of moulds.

PAINTS DIVISION

Deputy Mayoress in Distribution Department

A member of Distribution Department at Slough is now Deputy Mayoress of Slough. She is Mrs. W. Watson, whose husband, Mr. T. A. Watson, has been asked by the mayor to be his deputy.

Both Mr. and Mrs. Watson are members of Slough Town Council, and Mrs. Watson has recently been re-elected to the Borough Council. She is vice-chairman of the Allotments and Cemeteries Committee and serves on the Housing Committee, the Finance Committee and the Divisional Education Committee. She is also a governor of the new Haymill County secondary school at Slough.



Mrs. W. Watson

PLASTICS DIVISION

Retail Products

Through one of those mistakes which an unfortunate combination of circumstances can lead to, Plastics Division was left out of the list of I.C.I. retail products published in the last issue.

The Plastics' products are, of course, almost the best known of all those things which I.C.I. sells retail. Who has not heard of 'Luron,' 'Alkathene' tubing and 'Perspex'? But perhaps not everyone will know that there is a Plastics product called 'Crinothene,' which is officially described as "a decorative polythene sheet for lampshades and other home handicraft applications." There is also a younger brother of 'Perspex' in the shape of corrugated 'Perspex' sheeting, by now in widespread use, particularly in factories and farm buildings. And there is a newer form of 'Luron' called 'Luron 2' which is stronger and more supple than the original version.

All these things can be bought in the appropriate shops.

Safe Driving

In 1953 the Division's vehicles covered more than three-quarters of a million miles; chauffeurs averaged 28,686 miles each and the drivers of commercial vehicles 17,493 miles each.

A testimony to the safety with which these drivers carry out their jobs is the yearly ceremony at which drivers receive awards from the Royal Society for the Prevention of Accidents.

This year's ceremony was attended by drivers from all parts of Plastics Division. Nineteen drivers received from Mr. J. C. Swallow, chairman of the Division, awards in the National Safe Driving Competition sponsored by the R.S.P.A.

The competition is an annual one, and drivers receive awards for accident-free driving over a twelve-month period, qualifying for a medal after completing five accident-free years. Twelve Plastics drivers (including the Division's only lady driver, Mrs. Doris Bridge of Welwyn, and one 'Terylene' Council driver) received these medals; two received a fourth year diploma, one a third year diploma, and three a first year diploma.

Mr. Swallow thanked the drivers for their care on the roads, Inspector T. Winsor of Welwyn Garden City Police and Councillor McKnight, chairman of the local road safety organisation, also spoke at the dinner.

SALT DIVISION

Salt from the Air

An unusual problem faced the administrators of British Borneo recently. The inhabitants of central Borneo suffer from goitre, caused by a deficiency of iodine in their diet. One of the most convenient ways of correcting such a deficiency is to eat salt to which a very small amount of iodine—normally in the form of potassium iodide—has been added.

The problem was—how to get iodised salt to Central Borneo? The Acting Resident of Labuan and Interior approached I.C.I. (Malaya) and asked for their help, and the enquiry was passed on to the Salt Division.

So poor that it was decided to drop the supplies of salt by parachute. Then the phenomenal rainfall—200 in. annually—would need to be specially taken into account. The salt

protected from moisture, in some form of package that would survive a parachute drop.

Elaborate special containers could have been devised to fulfil both conditions, but what was needed was a package good enough to deliver the salt in perfect condition as cheaply as possible. After consulting the R.A.F. and the British North Greenland Expedition (which had been supplied on occasions by low-flying aircraft dropping packages without parachutes), Salt Division devised a moisture-proof and very strong flexible container.

A special new type of jute bag with interwoven seams formed the basis of the package. An excellent answer to the question of moisture-proofing lay in the use of polythene inner bags. A few 1 cwt. packages were then made up and subjected to some simple tests, the most impressive consisting of a free drop from a height of 18 ft. on to a concrete floor. Even when dropped on end the bags suffered no apparent damage.

One further precaution was needed. Dockers, when loading a cargo of jute-sacked goods, generally take hold of the bags by means of a sharp hook. This practice would almost certainly result in the polythene inner bags being pierced. The bags were therefore covered with four-ply paper sacks as camouflage.

The Resident of Labuan reports that the trial consignment was air-dropped successfully and none of the bags suffered any damage. The Resident's office is now investigating methods by which regular supplies of I.C.I. iodised salt can be made available to the native population.

I.C.I. (EXPORT) IRAQ

Floods cause Havoc in Baghdad

A recent article in the *Iraq Times* told the story of some people dining in a restaurant who suddenly noticed that two of their fellow diners were missing. Upon investigation it appeared that they had vanished, table and all, through the floor into a cavity below—from which they were later recovered.

This is a typical example of the damage caused in Baghdad by the recent Tigris floods. It is an amusing example; but the floods have been so serious as to amount to a national disaster. Iraq's only port, Basra, has been badly damaged; the Basra railway line is out of action and expected to remain so for some weeks; date plantations have been ruined and roads broken up.



The wreckage of Arab houses in New Baghdad

I.C.I. (Export) Iraq have come in for their share of troubles. Getting to the office in Baghdad presented new problems every day, as new holes appeared in Rashid Street, the main business street in the city. Considerable time was spent in moving furniture upstairs and moving members of the staff out of areas that were threatened by the water. From time to time the main roads near the city were blocked by herds of water buffaloes, sheep and cattle which were being moved because there was a new rumour of a breach in the dykes.

The Company's property came off comparatively lightly, thanks to prompt and efficient action by the staff. Early one morning they received news that seepage water was pouring down several side streets towards one of the Company's stores. When they investigated the situation they found that not only the I.C.I. store but many other houses in the locality were being flooded, thanks to a new wall built by the municipality which prevented the water from draining off into a local depression.

Several strong men with crowbars and sledge-hammers were persuaded to knock a hole in the wall. A municipal representative tried hard to prevent it, but the wall was finally breached and the water allowed to drain away harmlessly. As a gesture of good will I.C.I. subsequently repaired the wall at their own expense, but in such a way that the next flood will reopen the breach.

I.C.I. (TURKEY)

A New Landmark for Istanbul

On 29th April the new premises of I.C.I. (Turkey) in Istanbul were officially opened by the Governor-General of Istanbul, H.E. Prof. F. K. Gökay. Present at the ceremony were the British Consul-General in Istanbul; Mr. S. P. Leigh, chairman of I.C.I. (Turkey); Mr. M. N. Lubin, head of the Near East Department and a director of I.C.I. (Turkey); and leading Turkish officials and industrialists.

The new building, which Prof. Gökay called a very good example of international co-operation in general and Anglo-Turkish economic co-operation in particular, rises 80 ft. above ground at the edge of the Bosphorus and the Sea of Marmora. It has been conceived as a shoreline feature to be noticed from passing ships, and with its sweep of glass and display of products at the side of the covered pavement it will provide good advertisement for the Company's activities in this important overseas market. The upper floors command a clear view of the Asian part of Turkey, the Princess Isles, old Constantinople and the principal mosques.

The principle of housing both goods and sales staff under one roof, as adopted in the recently built I.C.I. offices at Kuala Lumpur and Rotterdam, has again provided the solution to many of the Company's problems in Istanbul. Goods enter the building at road level and are stored on the same floor or reach the first and second floors by goods lift. The third and fourth floors are devoted to offices, and on the top of the building is a canteen with an open-air terrace and a small flat for I.C.I. visitors.

The building was designed, and its construction supervised, by the Architectural Section of Engineering Services Department in London. One of the chief technical problems they met was the instability of the subsoil, which was reported as being "mud, muck, sand and bones to a depth of 10 metres." Borings also revealed the presence of an old—possibly Byzan-



I.C.I. (Turkey)'s new offices, which look out over the Bosphorus and Sea of Marmora at Istanbul

tine—quay wall at a considerable depth, and fragments of pottery were brought to the surface.

Two earthquakes occurred during construction. The building was designed to suffer the minimum damage from earth tremors, so that no faults developed.

Many of the materials used in the building came from Britain. Among the suppliers were the Paints, Metals, Plastics and Billingham Divisions of I.C.I., and the colour scheme throughout was planned by the I.C.I. Paints Advisory Department.

* * *

OUR NEXT ISSUE

Our main feature in August is a description of the extraordinarily interesting old works at Roslin which closed down last month. Here blackpowder has been made for over 150 years. This factory had much equipment which dated back to before the steam age and utilised the water power of the valley in completely rural surroundings. Superimposed upon its system of water power was a very early steam engine dating right back to the days when Watt's revolutionary inventions were first introduced. Our article describing these works, now closed because of the threat of subsidence due to the coal mining, has been written by Michael Danckwerts, news editor of the *Magazine*; the illustrator is our old friend Arthur Horowicz.

The colour feature is an account of the technique of colour printing. Some people may have wondered how the beautiful reproductions in the *Magazine* (although perhaps we should not say this ourselves) are achieved. This article and its colour illustrations give you a glimpse of the process.

There are two other features of interest. The first is a guide to the growing of strawberries written by the author of the article on the Strawberry Works; the other is a display in public almost unrecorded Division.

One is a... process worker at White... of some of the traditional games played for so many centuries yet still written by A. S. Irvine of Alkali

Going... Going... Gone!

By Cedric Jagger (Head Office)

An enthusiastic collector of antiques here recalls some of the excitement of the auction room—the bargains that can still be found, the pitfalls for the unwary, the unending matching of your wits and knowledge against others.

WHILE the conduct of any one auction sale is much the same as another, the surroundings in which they are held vary immensely. The biggest London rooms exude the dignified atmosphere of a cathedral; there, goods are handled with the reverence due to them, and business is transacted in a calm and unhurried manner.

The reputation of such rooms as these is very high, and a purchase carries an unwritten guarantee of good value and authenticity. In other words, you buy exactly what the catalogue offers you, no more and no less. These are the rooms in which thousands of pounds change hands over a single lot, and there is as much chance of bringing off an exceptional "buy" as there is of robbing the Bank of England.

The real bargains turn up in that vast majority of smaller rooms whose standards cannot, of necessity, even approximate to those of their more celebrated brothers. The worst of these are ill-lit, unheated, and so overcrowded with goods that it is sometimes impossible to find all the lots, let alone inspect them. The catalogue is virtually useless, since the compiler probably performs the same service for his firm as a farmer does for his of livestock and farming equipment, obsolete machinery, house property, antique and modern, and the like; he cannot be expected to be an expert on all these classes of goods.

Viewing a sale under these conditions is something of

an adventure, requiring not only the knowledge to recognise at its true value what is offered, but the experience of a Civil Defence rescue worker to find it, and a powerful torch to see it. All sorts of unexpected hazards may be encountered.

For example, on one occasion I was examining an immense Victorian mahogany grandfather clock, having climbed over and through a mountain of assorted furniture to reach it, when, to the accompaniment of rotting woodwork giving way, it slowly subsided into the floor. At the same time the hood, which was not fastened, parted company with the rest of the clock, almost beheading me in the process.

Purchases made under such conditions must always be rather speculative in character. When, in addition to chaotic viewing and inaccurate cataloguing, the sale itself produces some unexpected twist, almost anything can happen. At a country house "view" recently I discovered that a fine silver cruet of about 1780 had been relegated to a job lot of assorted rubbish, simply because the hall-marks were hidden underneath its feet. I was not even noticed when the catalogue was being compiled. I attended the sale with the intention of buying a certain piece of furniture, but I soon found that our secret had been present of their eyes should be made.

The sale was held in a room which was constantly being entered by the public, and the noise was such that it was difficult to hear the auctioneer. The sale was a disaster, and I was disappointed to find that the piece I had bought was not what I had expected. The noise was so loud that I could not hear the auctioneer, and the sale was a disaster.

that the auctioneer's voice was completely lost to all but the people immediately in front of him—and the lot was sold before my wife could bid for it. Immediately after this the auctioneer suspended proceedings until the storm abated.

Later in the sale exactly the same thing happened again, but my wife had by this time very wisely changed her position. As a result, while the majority of the audience were unable to hear what was going on, she bid for, and bought, a 6 cu. ft. capacity refrigerator of a very well known make at a fraction of its obvious value. This continues to render us excellent service and is one of our best bargains.

Even so, domestic appliances and radio and television sets are among the most speculative purchases to be made at auction sales, since very few rooms can provide facilities for testing them beforehand, although in the case of radio sets some auctioneers will not accept them for sale unless they can be shown, against guarantee, to be in working order.

The absence of sufficient lighting in some rooms, too, can make matters very difficult for the intending purchaser. I attribute entirely to inadequate lighting the fact that I possess two reproductions of water-colours by John Sargent which I thought were originals, and a genuine early Georgian oak gate-leg dining table which I thought was a fake!

The person who comes off best at any auction sale is undoubtedly the benevolent deity who wields the hammer. He is quite immune from attack by anybody. He regulates the bidding and has absolute discretion in the case of any dispute. He can refuse to accept your bid if he so wishes, and in the event of your acquiring a "lot," he can make you pay for it in cash on the spot, on pain of its being immediately offered for resale. The size of his commission depends on the prices he can obtain, and he can refuse to knock down an article if he thinks the bidding is too low. At no time does he take any responsibility for what he is selling, since it remains the vendor's property until the hammer falls, when title immediately passes to the purchaser. He cannot even be taken to task for the most flagrant errors in the catalogue, since the purchaser is expected to have satisfied himself on viewing one as to description, condition and authenticity of any Kuala which he is interested.

to many of us every catalogue so aptly puts it, he "makes the building at road 1.1.1." Even so, his business reputation reach the first and second floors are devoted to honest, fair and accurate in his building is a canteen with an oparties as he possibly can be, for I.C.I. visitors.

The building was designed, and it is to pay for your purchase by the Architectural Section of Engineering the premises, at the ment in London. One of the chief reasons for the instability of the subsoil, which was liable to being "mud, muck, sand and bones to a depth of 10 feet and acci-Borings also revealed the presence of an old—possibly Eo find



All sorts of unexpected hazard may be encountered . . .

that something which was perfect when sold has suffered damage in the interim, for you have no legal redress. There is also the danger that someone else may take possession of your goods.

On one occasion I bought one "lot," consisting of some half-dozen books, out of an entire library which was sold up in a very reputable saleroom in Sussex. When I went to clear it the following day, it had mysteriously disappeared, and a thorough search of the rooms failed to bring it to light. The auctioneers finally came to the conclusion that a bookseller who had purchased the remainder of the library had inadvertently taken my "lot" as well. Provided with his name and address, I then began a journey across half the county in search of my property.

When I eventually located his shop I discovered that he was just setting up in business, and the complete vanload of books which he had bought were piled in a heap on the floor and reached nearly to the ceiling. He expected that it would take several weeks to sort them all, and not until then would I know whether or not mine were among them. If they were not after that length of time I should have given up the idea of finding them.



As it turned out, this dealer had my books. Three days later they arrived at my home by registered post, beautifully packed, and with a polite note of apology. In spite of their legal rights in the matter it is worth while noting that the auctioneers refused to accept a penny of my money until the books had been found and safely returned to me.

Most salerooms are prepared to execute bids on behalf of clients who are unable to attend the actual sale. They make no charge for this service, insisting only that they be given written instructions to act on your behalf. On the whole, this is a better system to use than to send a friend or relative to bid for you. If the latter is successful, you will never be quite able to convince yourself that you could not have purchased at a better price if you had attended the sale in person. If unsuccessful, then your feeling of frustration is bound to provoke an unwelcome inquest. Furthermore, if the relative happens to be your wife, you run the risk of having your mind changed for you without your knowledge. By this means I have become the astonished owner of things I did not know I needed.

On the last occasion that this occurred I asked my wife to bid for an attractive, but not particularly valuable, eighteenth-century kitchen clock, which I proposed to install, logically enough, in our kitchen. When my wife returned from the sale she triumphantly presented me with a magnificent pair of Georgian serving spoons!

It transpired that she had not entirely agreed with me as to the suitability of the clock for our kitchen, and she had therefore allowed it to pass elsewhere. As some consolation for my disappointment, however, she had sat through the entire sale to bid for the spoons, which were one of the last items. Most of the other people had left the rooms for home by that time, and she was able to buy them very reasonably. I decided that as, in all fairness, the kitchen was her province, I could hardly grumble at her action. Apart from this, I liked the spoons.

There is some intangible quality about the auction sale which, if it attracts you, can provide endless entertainment. If you are an active participant you can match your wits and knowledge against a body of complete strangers, and success brings immense satisfaction. Your opponents may be dealers, housewives, or just people sheltering from the rain who have become interested in spite of themselves. You may find yourself bidding against a "ring," and on such occasions the battle of wits reaches its height. A steady nerve, a poker face and the ability to bluff it out can defeat even opposition such as this, for nobody except yourself need know your limiting bid. You are just as likely to make your rivals pay more than they intended as the reverse.

Syndicate bidding, incidentally, is not permissible unless the members declare themselves to the auctioneer before the sale takes place and obtain his agreement. This is unfortunately not always done, and the existence of a "ring" is almost impossible to prove. Its aim is to force the prices down, and in the "knock-out" which follows the sale (which is also forbidden if it takes place on the saleroom premises) lots may change hands half a dozen times before they have even been paid for by the original purchaser. Factors such as this only make the game more attractive to the initiated.

Even if you never make a bid, the auction room still exerts its influence over you. Every room should possess its small nucleus, mostly women, who sit with their sandwiches as soon as the vendors take the strategic position, and proceed alternatingly and not been their way through the day's activities. Interested in a thing. But to them the constantly changing of goods passing in front of their eyes should be made of faces and emotions which is present in them from the auctioneer's hammer is life. Again a loud burst of noise.



Girl in 'Ardil'-cotton frock

Photo by Oluf Nissen